



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/688,664	10/16/2003	David Tsang	2903	1194

29141 7590 10/26/2004

SAWYER LAW GROUP LLP
P O BOX 51418
PALO ALTO, CA 94303

EXAMINER

NGUYEN, VIET Q

ART UNIT	PAPER NUMBER
----------	--------------

2818

DATE MAILED: 10/26/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/688,664

Applicant(s)

TSANG, DAVID

Examiner

Viet Q Nguyen

Art Unit

2818

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on Election filed on 8/30/2004.
- 2a) ☐ This action is FINAL. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-23 is/are pending in the application.
- 4a) Of the above claim(s) 12 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1,2,6,7,9,13,14,18,19 and 21 is/are rejected.
- 7) ☒ Claim(s) 3-5,8,10,11,15-17,20,22 and 23 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 10/16/2003.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

The applicant's election of group 1, claims 1-11, 13-23 is acknowledged.

Claims 1-11 and 13-23 are present for examination.

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1 and 13 are rejected under 35 U.S.C. 103(a) as being unpatentable over **Rizzo et al (6,351,409)** and **Monsma et al (6,269,018)**.

Rizzo et al (see Fig.1) clearly shows a magnetic memory cell structure which includes at least one magnetic write line (20, 21) coupled to the data storage layer (as free layer 17) such that the flux closure is substantially achieved for the data storage layer of each magnetic cell as recited. Although there are not shown a plurality of magnetic cells, **Rizzo et al** has mentioned in its invention background the conventional use of MRAM array in many prior art structures, which obviously suggest the claimed plurality as well. Similarly, **Monsma et al (see Fig.5)** clearly shows a magnetic memory cell structure which includes at least one magnetic write line (42) coupled to the data storage layer (as free layer 55) such that the flux closure is substantially achieved for the data storage layer of each magnetic cell as recited. Obviously, there are also shown a pinned layer (51), tunnel junction layer (52), and insulating layer (56) included in each memory cell as well.

Art Unit: 2818

3. Claims **1,2,6,7,9,13,14,18,19, and 21** are rejected under 35 U.S.C. 103(a) as being unpatentable over **Bhattacharyya et al (6,740,947)**.

Bhattacharyya et al (see Fig.18) clearly shows a plurality of magnetic memory cells, each including a magnetic element having a data storage layer that stores data magnetically. Fig.81 further shows that each such magnetic memory cell consisting of at least one magnetic write line (11 or 15) coupled with at least one data storage layer (free layer 2) such that the flux closure is substantially achieved for the data storage layer of each magnetic cell as recited. Furthermore, the magnetic element is shown comprised of a pinned layer (reference layer 4), a free layer (2), and an insulating layer (barrier 6) therebetween, and it is obvious to one skilled in the art that the storage layer has a first easy axis being substantially perpendicular to the second easy axis as shown.

Regarding the claims 7 and 19, such magnetic write line (11 also has a soft magnetic layer (cladding 13) and a non-magnetic layer (conductor 11) lying between said soft material (13) and the magnetic element structure (2,4,6) as recited.

4. Other claims contain allowable subject matter over prior arts of record.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Viet Q Nguyen whose telephone number is (571) 272-1788. The examiner can normally be reached on 7am-6pm (EST).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Nelms can be reached on (703) 308-4910. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2818

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Viet Q Nguyen
Primary Examiner
Art Unit 2818



V. Nguyen
10/21/2004

